

*REMARKS/ARGUMENTS*

In response to the Office Action mailed March 8, 2006, Applicants amend their application and request reconsideration. In this Amendment, no claims are added or cancelled so that claims 1-20 remain pending.

Claims 1 and 3 were objected to with regard to certain informalities that have been corrected here.

In this Amendment, each of the independent claims has been amended in a similar way. The invention pertains to a method and apparatus of wavelength-conversion employing a non-linear crystal. Laser light is incident on the crystal and, through interaction with the crystal, harmonics of the light are produced at higher frequencies, i.e., shortened wavelengths, meaning higher energy. As described in the patent application, particularly when the non-linear crystal is cesium lithium borate (CLBO), it is very important to exclude nitrogen from contact with the output surface of the crystal. Nitrogen reacts and produces compounds, particularly in view of the relatively high energy of the output light produced, that causes deterioration in the crystal. To avoid that problem, in the invention at least a gaseous ambient at the output surface of the non-linear crystal is controlled. That ambient is controlled so that the ambient contains less nitrogen than found in the atmosphere and, further, so that the ambient is not solely oxygen, not solely one or more rare gases, and not mixtures of oxygen and at least one rare gas. The dependent claims are amended, as necessary, to conform to the description in the independent claims of the ambients employed according to the invention.

Independent claims 1 and 10 and many of their dependent claims were rejected as anticipated by Govorkov et al. (U.S. Patent 6,002,697, hereinafter Govorkov). This rejection is respectfully traversed as to the claims now presented.

Govorkov is pertinent prior art. Govorkov describes wavelength conversion methods and apparatus and controlling ambients of crystals, which may include CLBO, employed in the method and apparatus. As pointed out in the Office Action, Govorkov describes employing ambients of pure rare gases. Such ambients are excluded from the invention as defined in the claims now presented. Accordingly, Govorkov cannot anticipate any claim now pending.

Independent claims 1 and 10 and many of its dependent claims were also rejected as anticipated by Deki (EP 1048974). This rejection is respectfully traversed with regard to the claims now presented.

As mentioned in the Office Action, Deki describes a method of wavelength-conversion and an apparatus for wavelength-conversion in which a non-linear crystal is placed in a controlled gaseous ambient. That ambient may be solely oxygen or a mixture of a rare gas and oxygen. Both of those ambients are excluded from claims 1 and 10 so that Deki cannot anticipate either of those claims nor any of their dependent claims.

Claims 6 and 16 were rejected as unpatentable over Govorkov considered by itself. This rejection is founded upon the assertion that the respective parent claims 1 and 10 are anticipated by Govorkov. Since that assertion of anticipation cannot be maintained, the rejection of claims 6 and 16 must likewise be withdrawn.

Claims 6 and 16 were rejected as obvious over Deki considered by itself. This rejection is respectfully traversed.

Again, this rejection of claims 6 and 16 is founded upon the assertion that Deki anticipates claims 1 and 10, an assertion no longer applicable. Therefore, the rejection should be withdrawn.

Claim 11 was rejected as obvious over Govorkov in view of Umezu (U.S. Patent 5,862,163, hereinafter Umezu). This rejection is respectfully traversed.

The rejection of claim 11 is founded upon the assertion that claim 10 is anticipated by Govorkov. Since Govorkov cannot anticipate amended claim 10, the modification of Govorkov with Umezu cannot establish *prima facie* obviousness of claim 11. The rejection should be withdrawn.

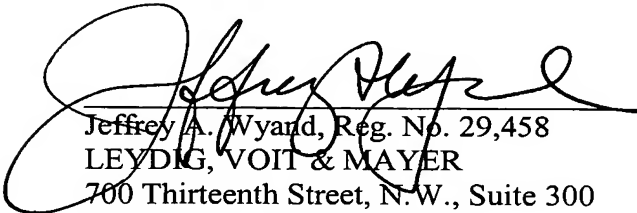
Claim 20 was rejected as unpatentable over Govorkov in view of Van Saarloos et al. (U.S. Patent 6,381,255, hereinafter Van Saarloos). This rejection is respectfully traversed.

Van Saarloos was cited as disclosing a machining apparatus employing laser light. Thus, Van Saarloos does not contribute to any modification of Govorkov that could establish *prima facie* obviousness of claim 1. Further, Govorkov cannot anticipate amended claim 1. Therefore, the combination of Govorkov and Van Saarloos cannot establish *prima facie* obviousness as to amended claim 20 so that the rejection of that claim should be withdrawn.

Applicants note that claims 3, 13, and 19 have been stated to be allowable and therefore do not require further comment.

For the foregoing reasons, all claims as presented here are in form for allowance,  
which is earnestly solicited.

Respectfully submitted,

  
Jeffrey A. Wyand, Reg. No. 29,458  
LEYDIG, VOIT & MAYER  
700 Thirteenth Street, N.W., Suite 300  
Washington, DC 20005-3960  
(202) 737-6770 (telephone)  
(202) 737-6776 (facsimile)

Date:

